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ABSTRACT

A major purpose of this study was to measure and compare the effectiveness of office procedures, model office, and cooperative office education courses in developing 12th grade students' office decision-making abilities as well as to compare their decision-making abilities with those of office supervisors and office workers. Two other purposes of the study were to observe the changes in students' perceptions of the office world of work and to measure and compare knowledge of business fundamentals. Some of the conclusions drawn from this study were that students completing a model office course make different decisions as a result of the course, while no such difference was observed for the other types of office training. All students showed changed perceptions of job knowledge, job qualifications and total office work with the highest scores made by students completing the model office course. A 22-item bibliography, the test instruments, and the tabulated data from the study are appended. (BP)

ED 094162

FINAL REPORT

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Project Number: 4-C-73

Effectiveness of Model Office, Cooperative Office Education, and Office Procedures in Developing Office Decision-making Abilities, in Changing Perceptions of the Office World of Work, and in Developing a Knowledge of Business Fundamentals and General Business Information

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G.N.M.

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SUMMARY

A major purpose of this study was to measure and compare the effectiveness of office procedures, model office, and cooperative office education courses in developing students' office decision-making abilities as well as to compare their decision-making abilities with those of office supervisors and office workers. A second purpose of the study was to investigate changes in students' perceptions of the office world of work as a result of their having completed a model office, cooperative office education, or traditional office procedures course. A third purpose of the study was to measure and compare students' knowledge of business fundamentals and general information.

The population of the study consisted of twelfth grade students enrolled in model office, cooperative office education, and office procedures courses in the public secondary schools of the State of Minnesota during 1972-73. Model office courses were limited to those using APEX model office materials.

Stratified proportional random samples of fifteen schools having model office and fifteen schools having cooperative office education courses were selected. Intact classes were used; that is all students in the model office and the cooperative office education courses in the respective selected schools participated in the study. In addition, all twelfth grade students enrolled in office procedures but not in model office or cooperative office education were included. The beginning sample of 877 was reduced to 713 as a result of student withdrawals and incomplete data.

Two types of data were collected. A student information sheet was used to collect pertinent personal data. Part of the personal data was used to determine socioeconomic status, one of the factors used in the final data analysis. The 20-word vocabulary test (Form 2) from the CAVD scale of Thorndike and others was administered to all students and the results were used as a measure of intelligence.

To collect achievement data, three instruments were used: Business fundamentals and general information test, office work perceptions instrument, and office decision-making cases. Statistical procedures used included t-tests and univariate and multivariate analyses of covariance.

Major findings of the study are listed below:

1. The office education course of study completed did not affect students' office decision-making abilities.
2. Students, regardless of office education course completed, made office decisions similar to those made by office supervisors and office workers.
3. Office education course of study completed affected students' perceptions of personal qualifications required of office workers.
4. Office education course of study completed affected students' achievement on the total test score of the Business fundamentals and general information test as well as their achievement on the following subtests: plurals, general information, judgment, and memory. It was also found that socioeconomic status had an effect on achievement in general information and judgment. The analysis also revealed that interaction of course and socioeconomic status affected achievement in the areas of grammar and judgment.

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Chapter 1

INTRODUCTION

This chapter describes the purposes of the study as well as the specific questions to be answered through the research. Also included are the need for the study and a review of relevant literature completed and in process. The chapter also reviews the limitations of the study and defines terms.

Purpose of the Research

A major purpose of this study was to measure and compare the effectiveness of office procedures, model office, and cooperative office education courses in developing students' office decision-making abilities as well as to compare their decision-making abilities with those of office supervisors and office workers. A second purpose of the study was to investigate changes in students' perceptions of the office world of work as a result of their having completed a model office, cooperative office education, or traditional office procedures course. A third purpose of the study was to measure and compare students' knowledge of business fundamentals and general information.

Specific Questions to be Answered

Specifically, the purposes of this study were to answer the following questions:

1. Do students, after having completed a course in office procedures, model office, or cooperative office education, make office decisions different from those made prior to enrollment in the course?

2. Are the office decision-making abilities of students affected by the following factors?
   a. Office education course completed
   b. Socioeconomic status of the student
   c. Interaction of office education course completed and socioeconomic status of the student

3. Do students, after having completed a course in office procedures, model office, or cooperative office education, make office decisions similar to those made by office supervisors?

4. Do students, after having completed a course in office procedures, model office, or cooperative office education, make office decisions similar to those made by office workers?

5. Is there a difference in the office decisions made by office supervisors and those made by office workers?

6. Do students, after having completed a course in office procedures, model office, or cooperative office education, have perceptions of office work different from their perceptions prior to enrollment in the course?

7. Are the office work perceptions of students affected by the following factors?
   a. Office education course completed
   b. Socioeconomic status of the student
   c. Interaction of office education course completed and socioeconomic status of the student

8. Do students, after having completed a course in office procedures, model office, or cooperative office education, score higher on the Business fundamentals and general information test than they did prior to enrollment in the course?

9. Are students' scores on the Business fundamentals and general information test affected by the following factors?
   a. Office education course completed
   b. Socioeconomic status of the student
   c. Interaction of office education course completed and socioeconomic status of the student

Need for the Research

Business educators over the years have recognized the need for a course that would bridge the gap between the school and the office; that is, between theory and practice. There seems to be agreement among businessmen, office workers, and teachers that successful office workers not only need to be adept in the basic skills such as typewriting, shorthand, business mathematics, filing, etc., but they also need to have the related knowledges and understandings necessary for successful employment. It is the feeling of many people in business education that the separate skill subjects are providing insufficient background in knowledges and understandings.

This concern gave rise to the establishment of office practice/procedures courses. Courses in this area might be specifically identified as secretarial office practice/procedures or clerical office practice/procedures in some schools. Regardless of the name, the purposes of the courses are generally similar:

1. The development of new skills and abilities which cannot easily be put into separate courses.

2. The integration and reinforcement of skills and knowledges previously learned.

One finds such areas of study as business ethics, office procedures and routines (work flow), automation in the office, records management and filing, and office communication systems being emphasized.

Passage of the Vocational Education Act of 1963 gave impetus to another type of office education--cooperative office education. The student in the cooperative education program receives instruction while in school that includes required general education and business courses. Part of the student's day is spent in a business on an office job.

The Minnesota Coordinator's manual: Cooperative office education (Lennes, 1972) lists the following benefits of cooperative office education for the student:

1. Develops through direct, on-the-job training an understanding of employment opportunities and responsibilities.

2. Provides for the student a realistic learning situation in which he may discover his interests and abilities.

3. Provides basic information about business necessary for intelligent career choice.

4. Develops attitudes and work habits necessary for job competency.

5. Develops a better understanding of human factors in business and industry through working with other employees.

6. Provides remuneration while learning employment skills. (Earn while you learn.)

7. Provides dual learning environment--school life and employment.

8. Provides job placement for possible permanent employment.

9. Develops the individual socially, civically, recreationally, and vocationally [p. 9].

In Minnesota, cooperative office education programs are eligible for reimbursement of a portion of teachers' salaries and certain preapproved equipment purchases.

A third type of office education program is the model office program. Model offices have been in existence in the secondary school curriculum in one form or another since the early 1930's. Considerable emphasis has been given to this curricular approach nationally and in the State of

Minnesota during the past 3-4 years. Initial costs of model office programs have been partially funded by the Division of Vocational and Technical Education, Minnesota State Department of Education. Continuing reimbursement is made by the State Department of Education in the form of teacher salary, travel, and equipment.

Many claims are made for the use of the model office in preparing students for careers in the office. Funk (1972) writes:

> Simulation provides a setting wherein students have the opportunity to work in a real office situation while under the close supervision of the classroom teacher. The simulation pulls together the previously acquired student skills and knowledge in such a way that the 'whole' employee develops through the integration of the various subject areas of business education [p. iii].

In the Lester Hill office simulation employer's guide (Krawitz, 1971) the following statement is made about how students are affected by the simulation:

> Students who are otherwise turned off by workbook projects and practice sets respond quickly to the realism of the Lester Hill simulation. Because they can immediately grasp the relevance of what they are learning to on-the-job performance, they are better motivated to build the skills they already have and to reach out for new skills. Because they can see how their performance contributes to the success of the entire office, their attitude toward accuracy improves, class attendance goes up, and the need for remedial skill building activities is more easily accepted. Once the students become involved, they strive for self-improvement, not to satisfy academic criteria, but to satisfy the demands of their peers and to make the office a success [p. 7].

The authors of The office: Reality training through simulation (Wright, Santos, and Jennings, 1972) in describing the APEX materials state:

> The office worker to be successful requires more than skills. It is vital that attitudes and knowledge combine to make up the complete person. This program is designed to focus on this very need. Activities contain a dimension dealing with improving such attitudes as dependability, promptness, resourcefulness, pride and other attitudes for the maintenance of good human relations, and of imparting such knowledge as office procedures and office machines. This new focus is taken because of the established fact

> that the office worker rarely fails due to lack of office skills. In fact the program, as it is designed takes into account the handicapped, minority groups, etc., ... [p. 3].

Proponents of the model office program make claims similar to those made by the cooperative office education proponents in regard to the advantages of this curricular organization over the traditional office procedures approach in developing students' office decision-making abilities and in changing students' perceptions of the office world of work. Many teachers, however, are skeptical about how effective these courses are in teaching knowledge of business fundamentals.

When one looks at the purposes of the various office education programs (office practice/procedures, model office, cooperative office education) and the claims made for these programs, one sees a great deal of similarity. In spite of the emphasis on the cooperative office education program and the more recent emphasis on the model office program, there is little empirical evidence available which supports the claims being made for using one curricular approach rather than another. Numerous articles have been published in which teachers claim an intuitive finding of superiority for model office programs or cooperative office education programs, yet these judgments remain largely intuitive rather than empirical. In determining the need for this study, research completed and in process was considered.

Research Completed

Fortman (1970) studied entry-level job requirements and employment possibilities in El Segundo (California). He reported that businessmen felt new office employees' strengths were in attitude, attendance, punctuality, and appearance. Major weaknesses reported were in general business knowledge, proofreading, and basic mathematical skill.

Jones (1972) as a result of his study on the effects of full-time clerical employment on the business skills and environmental perception of beginning office workers, recommended that more emphasis be given in high school clerical programs to such areas as spelling, arithmetic, basic English, expression, office procedures, and human relations.

Weber (1969) studied curriculum priorities in secretarial education using a Q-Sort consisting of 60 statements structured into six categories covering skills, knowledge, and personal traits involved in secretarial work. The Q-Sort was completed by secretaries, business executives, and secretarial teachers. Weber reported that all three groups agreed that personal qualities were more important for secretarial success than either fundamental or specialized skills and knowledges. He found that among the 60 items considered <u>most important</u> by all three groups were dependability, accuracy, initiative, and cooperation. He also reported that among the 60 items considered <u>least important</u> by all three groups were data processing, operating duplicating or photocopying machines, an understanding of the services that banks render, and operating adding and calculating machines.

One of the purposes of a study conducted by Kingston (1971) was to evaluate the effectiveness of cooperative office education in the preparation of students for office work. Job information was collected regarding two groups of beginning workers: cooperative office education graduates and noncooperative office education graduates. Kingston concluded:

1. Cooperative office education did not appear to have an effect on beginning wages, job stability, or reasons for changing jobs.

2. No significant difference existed in job satisfactions. Job supervisors indicated that both groups of beginning workers had a good attitude toward work, but both needed to show more initiative on the job.

3. Although higher ratings were given to the cooperative education graduate in every area of job performance measured, cooperative office education did not appear to have a significant effect on quantity or quality of work performed.

Clemons (1972) assessed the cooperative education programs in the secondary schools of Kentucky in order to disclose their strengths and weaknesses. Opinions of three groups involved with the programs were sought: students who were enrolled in the cooperative office education programs, teacher-coordinators, and businessmen who employed the students enrolled in the programs. A summary of Clemons findings follows:

1. Students are well prepared in the basic skills of typewriting and machine operation, but poorly prepared in shorthand skills.

2. The trait receiving the highest rating from all groups was that of appearance.

3. The three groups agreed that students enrolled in the program display strong character traits, but are poor in the ability to organize their work.

4. Career preparation was viewed as the greatest strength.

5. Students and employers viewed students' decision-making ability as poor.

6. All groups discerned as weak the students' interest, knowledge, and understanding of the business world.

7. Businessmen said that the major weakness of the program was that the students were not adequately prepared in the communication skills.

Delorey (1972) compared the job satisfaction and job satisfactoriness of business graduates of the Minneapolis Area Vocational High School and Technical Institute, and three inner-city and three outer-city comprehensive secondary schools. Findings reported by Delorey relevant to this study include:

1. There was no significant difference in the job satisfaction of the graduates who had and had not received cooperative training.

2. There was no significant difference between inner-city school graduates who had and had not received cooperative training, with the exception of the performance scale which was higher for the inner-city school graduate who had received cooperative training.

3. There was no significant difference between the outer-city school graduates who had and had not received cooperative training with the exception of the dependability scale, which was higher for the outer-city graduate who had not received cooperative training.

McFarland (1972) measured the changes in straight-copy typewriting skill, production typewriting skill, transcription of mailable copy skill, and knowledge of business fundamentals of students enrolled in ten federally reimbursed vocational secretarial classes in Missouri. He also compared the mean increases in the skills and knowledges of those participating in cooperative vocational secretarial training with the mean increases of those participating in noncooperative vocational secretarial training. Following is a summary of McFarland's conclusions:

1. Any difference in the mean increase in the knowledge of business fundamentals and in the straight-copy typewriting skill, production typewriting skill, and transcription of mailable copy skill between cooperative students and noncooperative students can be attributed to chance.

2. Cooperative training did not have any significant effect upon the development of skills and knowledges.

3. Student knowledge of business fundamentals does not change significantly in a vocational secretarial class.

4. All students who have been enrolled in a vocational class for one year do not possess the minimum skills and knowledge necessary for successful performance in a secretarial position, since post-test results reveal that not all students can transcribe mailable copy.

Nelson (1972) compared the simulation method of teaching office practice using the mobile office education (MOE) simulation materials with the traditional method of teaching office practice at the high school level. Nelson reported that students taught office and clerical skills by the use of simulation methods with the MOE simulation materials achieved at a significantly higher level in the skill areas of filing and checking and in the personality areas of motivation to succeed, cooperativeness, make friends easily, self-centeredness, and ability to think logically than did students taught by traditional methods and materials. Students taught office and clerical skills by the use of traditional methods and materials achieved at a significantly higher level in the skill areas of straight-copy typewriting and rough draft manuscript typewriting than did simulation students.

Research In Process

Synnes (PhD, University of Minnesota; In Process) is undertaking a study to:

> . . .compare typewriting achievement among the following groups of high school students: those completing a second-year typewriting course; those completing a model office course in addition to a second-year typewriting course; and those completing a model office course but not a second-year typewriting course. A secondary purpose of the study is to compare the general business and office knowledge of these same groups.

Halvas (PhD, University of Minnesota; In Process) is studying the relationship between sociometric status (peer group acceptance) of the office education student and his achievement, socio-economic status, attendance, and length of exposure to peers in traditional and simulated office laboratory environments. The purpose of Halvas' study is to determine:

> . . .whether there are different relationships between the sociometric status (peer group acceptance) and achievement, socio-economic status, and attendance of students enrolled in three types of office education courses--(1) traditional office education courses using no simulation; (2) office education courses using a 90-hour simulation (Lester Hill Corporation); and (3) office education courses using a 200-hour simulation (APEX).

Halvas is seeking answers to the following specific questions:

1. In the three types of office education courses, are students who perform well and students who perform poorly equally as acceptable to their classmates?

2. In the three types of office education courses, are students who attend class regularly and students whose attendance is highly irregular equally as acceptable to their classmates?

3. In the three types of office education courses, are students from all socio-economic levels of society equally as acceptable to their classmates?

4. Does the length of time students are exposed to interaction situations (no simulation, 90-hour simulation, 200-hour simulation) have any bearing upon the degree to which the achievement, attendance, and socio-economic status affect their peer group acceptance?

Halvas concludes the needs section of his proposal with the following statement:

> If there are significant differences in the degree of acceptance of office education students by their peers, based on the criteria of achievement, attendance, and socio-economic status, and if the length of exposure in simulated office environments significantly affects the sociometric status of certain types of office education students, there may be sufficient reason to warrant more selective utilization of simulated office laboratories within office education programs.

In addition to the aforementioned studies, several Delta Pi Epsilon chapters around the United States are undertaking studies to determine the relative effectiveness of skills development among the various office education capstone experiences--office procedures, model office, and cooperative office education (Delta Pi Epsilon, 1972). Most chapters have selected one small area in which to do their studies, such as production typewriting skills, various business machine skills, knowledge of records management, etc.

While some research has been completed in office procedures and cooperative office education courses, little research has been completed in model office courses. No completed research was found comparing the effectiveness of all types of office education curricular.

By reviewing and synthesizing the studies completed and underway, it should be possible to make some judgments in regard to the relative effectiveness of the various office education programs in developing the various office skills. This study, by emphasizing office work perceptions, office decision-making abilities, and business fundamentals, will add another dimension when determing total effectiveness of the various office education programs.

Limitations

This study was conducted with the following limitations:

1. Although there are a variety of commercially prepared model office curriculum materials available, the APEX materials are the most commonly used in Minnesota. Also, there is a great deal of variation among the various teacher-prepared materials. For these reasons the study was limited to those schools using APEX model office materials.

2. The study was limited to the extent that the students participating in the study were able to communicate their perceptions of the office world of work.

3. The results of the study will be limited in generalizability since neither the office supervisors nor the office workers used in the decision-making section of the study were randomly selected.

4. A fourth limitation was that the office procedures courses used in the study were not randomly selected. Intact classes of model office and cooperative office education students were randomly selected on a stratified basis. The office procedures participants were limited to those who were enrolled in such a course at the schools selected for model office or cooperative office education participation. Such a procedure may limit the generalizability of the results since the question arises as to whether there is comparability among the twelfth grade students who enroll in office procedures in a school which has a model office and/or cooperative office education program and those who enroll in such a course at schools which do not offer these courses.

5. There were no reliability or validity data available on the Business fundamentals and general information test.

Definition of Terms

Cooperative Office Education - A full-year course for twelfth grade students who attend school part of the school day and are employed in an office capacity part of the day. The classroom segment includes improvement of skills such as typewriting, filing, recordkeeping, and office machines, plus study of such topics as office etiquette, interpersonal relations, personal grooming, and money management. The work experience

segment is under the supervision of the teacher-coordinator and the employer, thereby giving the student actual work experience both in a learning situation and a wage-earning situation.

Interpersonal Relations - The interaction of office workers, both on and off the job, with their co-workers and supervisors.

Job Knowledge - Awareness of what work in an office involves, of possibilities for advancement, and of opportunities that are available.

Job Qualifications - The requirements of job entry and job advancement pertaining primarily to skills for office workers.

Model Office - A two-hour per day, full-year course which replicates the organization, tasks, work qualifications, conditions, and standards, as found in a general office setting.

Office Decision-making Ability - When given a situation or case typical of a situation which might occur in an office, the ability to select from several alternatives the best course of action to be taken.

Office Procedures - A one-hour per day, full-year course offered to eleventh and twelfth grade students to prepare them for office work through development and improvement of such skills as filing, typewriting, use of office machines, and recordkeeping, as well as the study of business forms, work flow, office etiquette, personal grooming, and interpersonal relationships. This course may also consist of two one-semester courses: office machines and office procedures.

Office Work Perception - The awareness of objects and events in office work which comes about through the senses and leads to a mental image that combines with previous experiences to form a concept of office work and the role a person might play in the office.

Personal Qualifications - Those requirements of an office worker in regard to dress, grooming, etiquette, and personal habits.

Chapter 2

PROCEDURES

This chapter describes the design and procedures of the study, and is organized as follows: (1) instruments, (2) student data collection procedures, (3) population and sample, and (4) pretest data comparisons.

Instruments

To collect data, several instruments were used. These instruments are described below

Student Information Sheet

A student information sheet (See Appendix A, pp. 47-48) was developed to collect pertinent personal data. In addition to the student's name, course, grade, age, sex, teacher's name, and school, the student was asked if he had worked for pay and, if so, for how many hours. The student also provided information in regard to the total number of quarters of the various business classes he would expect to have completed by the end of the year in which the study was conducted.

Index of Socioeconomic Status

Part of the data provided by the student on the student information sheet was to be used to determine socioeconomic status, one of the factors to be used in the data analyses. In order to use the Index of socioeconomic status (Institute for Developmental Studies, 1965), two items of information were required--the education and occupation of the main support of the family. Each of these factors is assigned a prestige value according to a predetermined scale. The values are then combined to provide a score which indicates low, middle, or upper socioeconomic status. Information was obtained for both parents, and the highest value was used.

Vocabulary Test

A measure was needed to determine whether ability differences, such as determined by intelligence tests, existed among the students enrolled in the various courses. Because of the difficulty in obtaining intelligence test scores from students' records and because of the number of different tests used in the schools which do not generate directly comparable scores, the 20-word vocabulary test (Form 2)[1] from the CAVD scale of Thorndike and others (Buros, 1965) was administered to all students. For two of the five forms, Miner (1961) obtained correlations of .47 and .54 with the

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[1] Since this test is copyrighted by its publisher, it has not been reproduced in this study.

WAIS (Wechsler Adult Intelligence Scale) which, when corrected for attenuation, were inflated to .84 and .86. Taking into account the effects of the adjustment, Miner concluded that the correlation was at least .75. Thorndike (1942) reported a reliability coefficient of .83 between two of the five forms of the test.

Business Fundamentals and General Information Test

The Business fundamentals and general information test[2] is one of six tests in the National business entrance test general testing series (National Business Education Association, 1972). The test was originally prepared under the direction of the Joint Committee on Tests of the United Business Education Association and the National Business Education Association. It was copyrighted in 1955, and revised in 1964 and 1972. There are no available national norms, or reliability and validity coefficients. The test has, however, been used by office procedures teachers over the years as a measure of achievement.

Office Work Perceptions

The office work perceptions instrument (See Appendix B, pp. 49-52) was developed by Rubald (1973) using four categories: job knowledge, personal qualifications, interpersonal relations, and job qualifications. These categories are defined in the Definition of Terms section of Chapter 1. Reliability of Rubald's instrument was determined through a test-retest procedure using office procedures and cooperative office education students. Correlating student scores on the original test with their retest scores produced a reliability of .88. Content validity was determined by Rubald through a series of test administrations to office management personnel until there was complete agreement on all statements.

Office Decision-Making Cases

To determine office decision-making ability, ten decision-making cases were developed by the investigators. Students were given ten situations or cases (See Appendix C, pp. 53-58) in which a problem existed. They were then asked to rank four possible courses of action for each case as to their perceived appropriateness. Since the cases were developed from critical incidents as reported by people who had been working in offices, it was assumed they had content validity. Reliability was determined through a one-week test-retest procedure using business education students in schools not participating in the study. Rank order correlation coefficients were derived for each student for each case. Using z transformation, the rank order correlations were averaged.

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[2] Since this test is copyrighted by its publisher, it has not been reproduced in this study.

providing a rank order correlation for each case. Rank order reliability for the total test instrument was determined using z transformation to average the coefficients for the ten cases. The correlation coefficient derived through this procedure was .98.

The above procedure did not take into consideration "best" solutions on the decision-making cases, only rank-ordered solutions. In order to determine what might be considered "best" solutions, the office decision-making cases were administered to 38 office supervisors and 38 office workers (distributed to 50 of each) in April, 1973. These personnel were selected based on size of company and type of office position so that there was proportional representation based on national data. (For a full description of this process, the reader is referred to the NOBELS Final Report (Lanham, 1972).) A "best" solution was computed for both office supervisors and office workers by selecting the solution chosen as number one choice most often by each group for the problem presented in each case.

In addition, a "weighted" solution was determined for each case for both office supervisors and office workers. This was done using a frequency count of the number of times each of the four options per case ranked first, second, third, or fourth. The score for each option was determined by multiplying by a value of "3" the number of times rank one was chosen for that option, by "2" for rank two, by "1" for rank three, and by "0" for rank four. The resulting products were summed to provide a weighted score for each option. These weighted scores were then ranked for each case.

The procedure for scoring student tests, using weighted solutions, is described below. If the student's first choice was the same as the office worker (office supervisor) solution with the highest ranking, he received 3 points; if his first choice was the solution which had the second highest ranking, he received 2 points; etc. These points were then summed to get a total weighted score for each student. Students' total weighted scores were averaged to get the weighted mean scores for each group of students.

The "best" solution and the top ranked "weighted" solution for each case were the same for the office supervisors as well as for the office workers. There was, however, a difference between office supervisors and office workers using both "best" solution and top ranked "weighted" solution on two of the ten cases.

The data gathered through the test-retest procedure of business education students described above was scored using the "best" solutions and "weighted" solutions provided by office supervisors and office workers. Four additional reliability coefficients were then computed for the office decision-making cases. The results of these computations are summarized in Table 1, p. 15.

Table 1

Office Decision-making Cases Reliability Coefficients Computed Using Office Supervisor and Office Worker "Best" and "Weighted" Solutions

Solution	Reliability Coefficient
Office Supervisor (Best)	.44***
Office Supervisor (Weighted)	.40***
Office Worker (Best)	.45***
Office Worker (Weighted)	.43***

***$p < .001$.

The results show that although these reliability coefficients are not as high as the rank order reliability coefficient, a relationship that is not due to chance exists between reliability sample test-retest scores using "best" and "weighted" scores.

Student Data Collection Procedures

After the schools were identified through a stratified proportional random procedure (described in the following section), letters were sent to principals, business department chairmen, office education coordinators, model office teacher-managers, and office procedures teachers by the state supervisor for secondary business and office education and the project directors outlining the purpose of the study and requesting their participation in the study. All contacted agreed to participate in the study.

Following the identification of the sample, the packet of data collection instruments, along with directions, was sent to each participating teacher. The packet included:

1. Directions for collecting data
2. Student information sheet
3. Thorndike vocabulary test
4. Office work perceptions instrument
5. Office decision-making cases
6. Business fundamentals and general information test

Teachers were asked to have students complete the various instruments no later than September 30, 1972. Provision was made for teachers to return all materials to the project directors not later than October 15, 1972.

On May 1, 1973, teachers were sent the following materials to be administered before May 21, 1973:

1. Directions for administering instruments
2. Office work perceptions instrument
3. Office decision-making cases
4. Business fundamentals and general information test

Provision was made for teachers to return all materials to the project directors not later than June 1, 1973.

Population and Sample

The sampling procedure and loss of sample are described in the following paragraphs.

Sampling Procedure

The population consisted of twelfth grade students enrolled in model office (MO), cooperative office education (COE), and office procedures (OP) courses in the public secondary schools of the State of Minnesota during 1972-73. A list of schools offering approved cooperative office education and model office (APEX) courses was obtained from the Division of Vocational and Technical Education, State Department of Education.

Because of the difficulty of selecting students randomly, stratified proportional random samples of fifteen schools having model office and fifteen schools having cooperative office education were selected. Intact classes were used; that is, all students in the model office and the co-operative office education courses in the respective selected schools participated in the study. In addition, all twelfth grade students enrolled in office procedures but not in model office or cooperative office education were included.

Since a large number of secondary vocational centers offer model office courses, they were included in the stratified proportional random sample. Because the vocational centers do not offer office procedures, twelfth grade students from the center's participating schools who were enrolled in office procedures at the home schools were included in the study. Table 2, p. 17, shows, by school size, the number of schools selected.

Table 2

Number of Schools Included in the Sample by Size and Course*

School Size	COE	MO
1,000 and over	12	6
Under 1,000	3	2
Vocational Centers		7
Total	15	15

*Office procedures courses were not selected randomly; all students enrolled in office procedures courses in the COE and MO selected schools participated in the study; for the vocational centers, office procedures courses in the home schools were used.

Loss of Sample

One of the problems in research is the potential for incomplete data. Table 3, p. 18, shows the number of subjects who completed the pretest data, the number of subjects who were not included in the final data analysis, and the number of subjects included in the final data analysis. Subjects were not included in the final data analysis for one of two reasons: some students withdrew from the various participating classes, and some students had incomplete test data because of absences on test days or failure to complete a test instrument.

In order to determine whether the sample had been biased as a result of student drops, t-tests were used to determine whether there were significant differences in personal characteristics and pretest scores (office work perceptions, office decision-making cases, Business fundamentals and general information test) between students who were dropped and students who had complete data. Summary tables of the t-test results for each course can be found in Tables 20-22 (Appendix D, pp. 60-68).

Table 3

Number of Student Participants by Course

Student Classification	Course			
	COE	MO	OP	Total
Stays	241	236	236	713
Drops	42	47	75	164
Total with Pretest Data	283	283	311	877

No significant differences were found when comparing office work perceptions and Business fundamentals and general information test pretest scores of the Stays and Drops for any of the courses. There were no significant differences in the vocabulary (intelligence) scores of Stays and Drops for any of the courses. The t-tests revealed that a significantly higher number of cooperative office education Drops ($\bar{X}$ = 86%) had worked for pay (in a job other than a cooperative office education position) than had cooperative office education Stays ($\bar{X}$ = 68%). Also, cooperative office education Stays had anticipated completing significantly more quarters of business subjects ($\bar{X}$ = 20.75) than did cooperative office education Drops ($\bar{X}$ = 18.42). Office procedures Stays were significantly older ($\bar{X}$ = 17.06) than office procedures Drops ($\bar{X}$ = 16.94). There were no significant differences between model office Stays and Drops on any of the personal characteristics.

The t-test procedure revealed significant differences on the office decision-making cases between office procedures Stays ($\bar{X}$ = 4.60) and Drops ($\bar{X}$ = 4.00) when using the office supervisor "best" solutions in scoring. A significant difference was also found between office procedures Stays ($\bar{X}$ = 4.05) and Drops ($\bar{X}$ = 3.44) when using the office worker "best" solutions in scoring. No significant differences were found using "weighted" solutions.

A significant difference was found between the cooperative office education Stays ($\bar{X}$ = 4.18) and Drops ($\bar{X}$ = 3.63) when using the office worker "best" solutions in scoring. No significant differences were found using the office supervisor "best" solutions or "weighted" solutions.

No significant differences were found when comparing office decision-making cases pretest scores of the model office Stays and Drops using any of the scoring procedures.

Out of 78 t-tests, only 6 were significant. It would be expected that at the .05 level four of the tests would be significant by chance. Even though the differences found were statistically significant, they were minor in terms of practical significance. Thus it was concluded that students not included in the final data analysis had essentially the same beginning characteristics as students who were included in the study.

Pretest Data Comparisons

Analysis of variance statistical procedures were performed on selected student characteristics, office work perceptions pretest scores, Business fundamentals and general information test pretest scores, and office decision-making cases pretest scores. This was done to determine if there were significant differences among the students enrolled in the three types of office education courses prior to the start of the study. If significant differences were found, Tukey t-tests were run to determine which group(s) were different from the other(s). The results of these procedures are reported in the following paragraphs. Tables 20-22 (Appendix D, pp. 60-62) contain mean scores and standard deviations for the various pretest instruments and personal characteristics, by course.

Selected Student Characteristics

The student characteristics compared in the three courses included: sex, age, socioeconomic status, vocabulary (intelligence), business courses, and work for pay.

Sex. There were no significant differences in sex. A very high percentage of the students in all courses were female. For this reason students were not grouped by sex in later analysis.

Age. Analysis of variance on age revealed that there was no significant difference in ages of the subjects in the three groups. The average age of students in all groups approximated 17 years.

Socioeconomic Status. Students were classified in one of three socioeconomic levels: lower, middle, or upper. Analysis of variance on socioeconomic status (Table 4, p. 20) showed that there was a significant difference among courses. The Tukey t-test procedure showed that students in model office ($\bar{X}$ = 2.14) and cooperative office education ($\bar{X}$ = 2.18) had approximately the same socioeconomic status. Office procedures ($\bar{X}$ = 2.39) students, on the other hand, had a significantly higher average socioeconomic status than did students in the other two groups.

Table 4

Analysis of Variance and Tukey t-test on Socioeconomic Status for Office Procedures, Model Office, and Cooperative Office Education Students

Source	DF	SS	MS	F
Course (OP, MO, COE)	2	8.76	4.38	8.05**
Error	708	385.02	.54	

Tukey t-test ($p < .05$ used to determine differences)
Same: MO ($\bar{X} = 2.14$) and COE ($\bar{X} = 2.18$)
Different: OP ($\bar{X} = 2.39$)

*$p < .05$.
**$p < .01$.

Vocabulary. As indicated previously, the Thorndike vocabulary test (Form 2) was used as an indicator of intelligence. Analysis of variance showed no significant differences among students in the various courses.

Worked for Pay. Students were asked if they had worked for pay in any job other than in a cooperative education position. Analysis of variance on the responses to this question revealed no significant differences.

If students indicated they had worked for pay, they were asked to provide additional data about their jobs including company name, job title, average hours worked per week, and dates of employment. This work was separated into related (office) work experience and unrelated work experience. Analysis of variance was run on each of the two types of work experience to determine if there were significant differences in the groups. There were no significant differences in the average amount of related work experience among the three groups. There was a significant difference, however, in the number of hours of unrelated work experience (Table 5, p. 21). While there was no significant difference between the office procedures ($\bar{X} = 495.41$) and cooperative office education ($\bar{X} = 697.52$) students, and between the cooperative office education ($\bar{X} = 697.52$) and model office ($\bar{X} = 724.68$) students, there was a significant difference between the office procedures ($\bar{X} = 495.41$) and the model office ($\bar{X} = 724.68$) students in the amount of unrelated work experience.

Table 5

Analysis of Variance and Tukey t-test on Unrelated Work Experience for Office Procedures, Model Office, and Cooperative Office Education Students

Source	DF	SS	MS	F
Course (OP, MO, COE)	2	7333560.00	3666780.00	3.98*
Error	704	648234347.06	920787.42	

Tukey t-test ($p < .05$ used to determine differences)
Same: OP ($\bar{X}$ = 495.41) and COE ($\bar{X}$ = 697.52); COE ($\bar{X}$ = 697.52) and MO ($\bar{X}$ = 724.68)
Different: OP ($\bar{X}$ = 495.41) and MO ($\bar{X}$ = 724.68)

*$p < .05$.
**$p < .01$.

Courses. Students recorded the number of quarters of all business courses they anticipated completing by the end of the year in which the study was undertaken. For analysis of variance purposes the number of quarters were totaled for each student. The analysis of variance reported in Table 6, p. 22, shows that there was a significant difference in the average number of quarters of business subjects completed by the students in the various courses. The t-test procedure revealed that there was no difference between cooperative office education ($\bar{X}$ = 20.75) and model office ($\bar{X}$ = 21.34) students. There was a significant difference between these two groups and the third group, office procedures ($\bar{X}$ = 15.13). This difference might be explained by the fact that students usually get two credits for model office and cooperative office education. Thus it would be expected that they would average at least four more quarters of business education.

Office Work Perceptions

The four subtest scores and the total score on the office work perceptions test instrument were compared among the three office education courses.

Job Knowledge. The results of analysis of variance on job knowledge pretest scores revealed no significant differences among the three office education groups.

Table 6

Analysis of Variance and Tukey t-test on Quarters of Business Subjects Completed for Office Procedures, Model Office, and Cooperative Office Education Students

Source	DF	SS	MS	F
Course (OP, MO, COE)	2	5459.24	2729.62	81.01**
Error	702	23655.02	33.70	

Tukey t-test ($p < .05$ used to determine differences)
Same: COE ($\bar{X}$ = 20.75 and MO ($\bar{X}$ = 21.34)
Different: OP ($\bar{X}$ = 15.13)

*$p < .05$.
**$p < .01$.

Personal Qualifications. There were no significant differences on pretest personal qualifications mean scores among the three groups.

Interpersonal Relations. The results of the analysis of variance on the pretest interpersonal relations scores are reported in Table 7, p. 23. A significant difference was found. Further analysis (Tukey t-test) showed that while there was no significant difference between mean scores for office procedures ($\bar{X}$ = 11.70) and model office ($\bar{X}$ = 11.85), the mean score for cooperative office education ($\bar{X}$ = 11.41) was significantly lower than those of the other two.

Job Qualifications. No significant differences were found on the analysis of variance on the job qualifications pretest scores among the three groups.

Total Score. Analysis of variance revealed no significant differences among the mean scores of the three office education groups on the total office work perceptions score.

Business Fundamentals and General Information Test

The eight subtest scores and the total score on the Business fundamentals and general information test were compared among the three office education courses.

Table 7

Analysis of Variance and Tukey t-test on Interpersonal Relations Pretest for Office Procedures, Model Office, and Cooperative Office Education Students

Source	DF	SS	MS	F
Course (OP, MO, COE)	2	24.15	12.07	8.12**
Error	710	1055.90	1.49	

Tukey t-test ($p < .05$ used to determine differences)
Same: OP ($\bar{X} = 11.70$) and MO ($\bar{X} = 11.85$)
Different: COE ($\bar{X} = 11.41$)

*$p < .05$.
**$p < .01$.

Spelling. No significant differences were found among the three groups of office education students.

Plurals. The results of the analysis of variance on plurals revealed no significant differences.

Grammar. No significant differences were found among the mean scores of the office procedures, model office, and cooperative office education students on the grammar pretest.

Expression. Analysis of variance revealed no significant differences among the three groups on the expression pretest scores.

General Information. The results of the analysis of variance on the general information pretest scores revealed no significant differences.

Judgment. Analysis of variance revealed no significant differences among the three groups on the judgment pretest scores.

Arithmetic. The results of the analysis of variance on the pretest arithmetic scores are reported in Table 8, p. 24. There was no significant difference between the office procedures ($\bar{X} = 5.82$) and the cooperative office education ($\bar{X} = 5.84$) pretest arithmetic scores. The pretest arithmetic mean score of the model office ($\bar{X} = 7.18$) students was, however, significantly higher than the mean scores of either of the other two groups.

Table 8

Analysis of Variance and Tukey t-test on Arithmetic Pretest for Office Procedures, Model Office, and Cooperative Office Education Students

Source	DF	SS	MS	F
Course (OP, MO, COE)	2	286.83	143.41	18.82**
Error	710	5411.74	7.62	

Tukey t-test ($p < .05$ used to determine differences)
Same: OP ($\bar{X} = 5.82$) and COE ($\bar{X} = 5.84$)
Different: MO ($\bar{X} = 7.18$)

*$p < .05$.
**$p < .01$.

Memory. Analysis of variance (Table 9, p. 25) on the pretest memory scores revealed a significant difference. The model office students ($\bar{X} = 7.56$) scored significantly higher than did the office procedures ($\bar{X} = 6.73$) and the cooperative office education ($\bar{X} = 6.84$) students.

Total Score. Analysis of variance revealed no significant differences in the mean pretest Business fundamentals and general information test total scores among the three groups of students participating in the study.

Office Decision-making Cases

The students' office decision-making cases were scored in four ways: (1) using office supervisor "best" solutions; (2) using office supervisor "weighted" solutions; (3) using office worker "best" solutions; and (4) using office worker "weighted" solutions. Analysis of variance was run on each of these sets of scores.

The only significant difference found among the groups was when the pretests were run using the office worker "weighted" solutions (Table 10, p. 25). Even though the analysis of variance showed a significant difference among the groups, the Tukey t-test revealed no difference between any two of the groups when compared separately.

Table 9

Analysis of Variance and Tukey t-test on Memory Pretest for Office Procedures, Model Office, and Cooperative Office Education Students

Source	DF	SS	MS	F
Course (OP, MO, COE)	2	95.28	47.64	6.51**
Error	710	5195.62	7.32	

Tukey t-test ($p < .05$ used to determine differences)
Same: OP ($\bar{X} = 6.73$) and COE ($\bar{X} = 6.84$)
Different: MO ($\bar{X} = 7.56$)

*$p < .05$.
**$p < .01$.

Table 10

Analysis of Variance and Tukey t-test on Office Decision-making Cases Pretest (Using Office Worker "Weighted" Solutions) for Office Procedures, Model Office, and Cooperative Office Education Students

Source	DF	SS	MS	F
Course (OP, MO, COE)	2	53.63	26.82	3.31*
Error	708	5740.32	8.11	

Tukey t-test ($p < .05$ used to determine differences)
Same: COE ($\bar{X} = 21.40$), MO ($\bar{X} = 21.42$), and OP ($\bar{X} = 22.00$)
Different: None

*$p < .05$.
**$p < .01$.

Summary

The instruments used in this study as criterion measures were office work perceptions, office decision-making cases, and Business fundamentals and general information test.

The population consisted of twelfth-grade students enrolled in model office, cooperative office education, and office procedures courses in the public secondary schools of the State of Minnesota. A total of 877 students were selected through a stratified proportional random sampling procedure of intact classes to participate in the study. Because of student withdrawal from the various participating classes and incomplete test data, 713 students were included in the final data analysis. On the basis of t-test procedures, it was concluded that students not included in the final data analysis had essentially the same beginning characteristics as students who were included in the study.

Analysis of variance statistical procedures were performed on selected student characteristics and pretest scores on the criterion instruments to determine if there were significant differences among students enrolled in the three types of office education courses prior to the start of the study.

Since there were significant differences among the groups on some of the pretest scores, two-way analyses of covariance based on course and socioeconomic status, using pretest scores as covariates, were used to determine if there were significant differences among the three groups on the posttest scores of the criterion instruments.

Chapter 3

FINDINGS

To answer the questions asked in this study, two statistical procedures were used. The t-test statistical procedure was used to determine if there were differences between pre- and posttest scores on each of the instruments for each group. In addition, t-tests were used to determine if students who completed the various office education courses made office decisions similar to those made by office supervisors and office workers. Also, t-tests were run to determine if there were differences in the office decisions made by office supervisors and office workers.

Since there were significant differences among the groups on some of the pretest scores, two-way analyses of covariance based on course and socioeconomic status and using pretest scores as covariates were used to determine if there were significant differences among the three groups on the posttest scores for the various instruments.

The results of these procedures are reported in the following paragraphs.

Office Decision-making Cases

Question 1: Do students, after having completed a course in office procedures, model office, or cooperative office education, make office decisions different from those made prior to enrollment in the course?

Table 11, p. 28, shows the results of the t-test analyses on the pre- and posttest raw scores of the office decision-making cases when using the office supervisor "best" and "weighted" and the office worker "best" and "weighted" solutions for scoring.

The results show that only when using the office worker "weighted" solutions do office procedures students have a significantly higher posttest than pretest score.

Posttest scores for model office students were significantly higher than pretest scores in three cases: when using the office supervisor "best" solutions and when using both the office worker "best" and "weighted" solutions.

There were no significant differences in the cooperative office education students' pretest and posttest scores under any scoring method.

When all students were grouped, the posttest scores were significantly higher than the pretest scores when using the office supervisor "best" and the office worker "best" and "weighted" solutions.

Table 11

Means, Standard Deviations, and t-values of Office Procedures, Model Office, Cooperative Office Education, and All Students for Office Decision-making Cases Pre- and Posttest Scores Using Office Supervisor "Best" and "Weighted" and Office Worker "Best" and "Weighted" Solutions for Scoring

Variable	Pretest		Posttest		t-value
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	
Office Procedures					
Office Sup (Best)	4.60	1.47	4.80	1.56	1.71
Office Sup (Weighted)	22.36	3.04	22.74	3.10	1.73
Office Worker (Best)	4.05	1.33	4.20	1.45	1.48
Office Worker (Weighted)	21.40	3.07	22.08	3.03	3.20**
Model Office					
Office Sup (Best)	4.61	1.38	4.84	1.46	2.13*
Office Sup (Weighted)	22.46	2.54	22.62	2.94	.69
Office Worker (Best)	4.11	1.36	4.34	1.37	2.16*
Office Worker (Weighted)	21.58	2.63	22.19	3.03	2.57*
Cooperative Office Education					
Office Sup (Best)	4.78	1.35	4.83	1.39	.55
Office Sup (Weighted)	22.84	2.73	22.77	2.96	-.34
Office Worker (Best)	4.25	1.28	4.28	1.30	.32
Office Worker (Weighted)	22.05	2.82	22.33	2.84	1.22
All Students					
Office Sup (Best)	4.66	1.40	4.82	1.47	2.55*
Office Sup (Weighted)	22.56	2.78	22.71	2.99	1.20
Office Worker (Best)	4.14	1.33	4.27	1.37	2.28*
Office Worker (Weighted)	21.68	2.86	22.20	2.96	3.98**

*$p < .05$.
**$p < .01$.

Question 2: Are the office decision-making abilities of students affected by the following factors?
a. Office education course completed
b. Socioeconomic status of the student
c. Interaction of office education course completed and socioeconomic status of the student

Using pretest scores as the covariates, two-way analyses of covariance based on course and socioeconomic status were used to test significant differences of the means of students' posttest office decision-making scores. This procedure was followed four times by using the office supervisor "best" and "weighted" and the office worker "best" and "weighted" solutions when scoring (see Chapter 2, p. 12, for scoring procedure). Table 12 summarizes the results of these analyses.

Table 12

Analyses of Covariance for Office Decision-making Cases Posttest Scores (Office Supervisor "Best" and "Weighted" and Office Worker "Best" and "Weighted" Solutions Used When Scoring) Using Pretest Scores as Covariates, by Course and Socioeconomic Status

Variable	MS	F
Office Supervisor "Best"		
Course	.24	.12
SES	1.41	.72
Course and SES	2.19	1.12
Office Supervisor "Weighted"		
Course	1.60	.19
SES	8.27	1.01
Course and SES	17.82	2.17
Office Worker "Best"		
Course	.86	.51
SES	.63	.37
Course and SES	3.14	1.84
Office Worker "Weighted"		
Course	.23	.03
SES	6.43	.79
Course and SES	16.76	2.07

*$p < .05$.
**$p < .01$.

The results of the analyses show that there were no differences among the decision-making abilities of students using any scoring method, when compared by course alone, by socioeconomic status alone, or by course and socioeconomic status taken together.

Unadjusted and adjusted posttest means, along with standard deviations, for each scoring method can be found in Appendix D, Tables 23-25, pp. 63-64.

Question 3: Do students, after having completed a course in office procedures, model office, or cooperative office education, make office decisions similar to those made by office supervisors?

The results of the t-test analyses comparing office supervisors' scores and students' posttest scores on the office decision-making cases are reported in Table 13, p. 31.

Analysis of these data shows that students do make decisions similar to those made by office supervisors. There were no significant differences between the mean scores of each of the three groups and All Students and those of office supervisors using any of the scoring methods.

Question 4: Do students, after having completed a course in office procedures, model office, or cooperative office education, make office decisions similar to those made by office workers?

Table 14, p. 32, shows the results of the t-test analyses comparing office workers' scores and students' posttest scores on the office decision-making cases.

There were no significant differences between the office workers' and students' posttest office decision-making scores for any of the three office education groups or All Students when using the office supervisor "best" and the office worker "best" and "weighted" solutions in scoring. There were significant differences between the students' posttest and office workers' office decision-making cases scores in all cases except between the model office students and the office workers using the office supervisor "weighted" solutions when scoring.

Question 5: Is there a difference in the office decisions made by office supervisors and those made by office workers?

Table 13

Means, Standard Deviations, and t-values of Office Education Students' Posttest and Office Supervisors' Office Decision-making Cases Scores Using Office Supervisor "Best" and "Weighted" and Office Worker "Best" and "Weighted" Solutions When Scoring

Variable	Students		Supervisors		t-value
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	
Office Procedures					
Office Sup (Best)	4.80	1.56	4.74	1.47	.22
Office Sup (Weighted)	22.74	3.10	22.63	3.17	.21
Office Worker (Best)	4.20	1.45	4.47	1.25	-1.08
Office Worker (Weighted)	22.08	3.03	23.03	2.47	-1.83
Model Office					
Office Sup (Best)	4.84	1.46	4.74	1.47	.40
Office Sup (Weighted)	22.62	2.94	22.63	3.17	-.02
Office Worker (Best)	4.34	1.37	4.47	1.25	-.59
Office Worker (Weighted)	22.19	3.03	23.03	2.47	-1.62
Cooperative Office Education					
Office Sup (Best)	4.83	1.39	4.74	1.47	.40
Office Sup (Weighted)	22.77	2.96	22.63	3.17	.26
Office Worker (Best)	4.28	1.30	4.47	1.25	-.85
Office Worker (Weighted)	22.33	2.84	23.03	2.47	-1.43
All Students					
Office Sup (Best)	4.82	1.47	4.74	1.47	.35
Office Sup (Weighted)	22.71	2.99	22.63	3.17	.16
Office Worker (Best)	4.27	1.37	4.47	1.25	-.88
Office Worker (Weighted)	22.20	2.96	23.03	2.47	-1.69

*$p < .05$.
**$p < .01$.

Table 14

Means, Standard Deviations, and t-values of Office Education Students' Posttest and Office Workers' Office Decision-making Cases Scores Using Office Supervisor "Best" and "Weighted" and Office Worker "Best" and "Weighted" Solutions When Scoring

Variable	Students		Workers		t-value
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	
Office Procedures					
Office Sup (Best)	4.80	1.56	4.68	1.38	.41
Office Sup (Weighted)	22.74	3.10	21.66	3.51	1.97*
Office Worker (Best)	4.20	1.45	4.66	1.21	-1.83
Office Worker (Weighted)	22.08	3.03	23.08	3.09	-1.88
Model Office					
Office Sup (Best)	4.84	1.46	4.68	1.38	.61
Office Sup (Weighted)	22.62	2.94	21.66	3.51	1.83
Office Worker (Best)	4.34	1.37	4.66	1.21	-1.37
Office Worker (Weighted)	22.19	3.03	23.08	3.09	-1.68
Cooperative Office Education					
Office Sup (Best)	4.83	1.39	4.68	1.38	.62
Office Sup (Weighted)	22.77	2.96	21.66	3.51	2.09*
Office Worker (Best)	4.28	1.30	4.66	1.21	-1.67
Office Worker (Weighted)	22.33	2.84	23.08	3.09	-1.50
All Students					
Office Sup (Best)	4.82	1.47	4.68	1.38	.57
Office Sup (Weighted)	22.71	2.99	21.66	3.51	2.09*
Office Worker (Best)	4.27	1.37	4.66	1.21	-1.69
Office Worker (Weighted)	22.20	2.96	23.08	3.09	-1.78

*$p < .05$.
**$p < .01$.

To determine if there were significant differences between the office supervisors' and office workers' scores on the office decision-making cases, t-tests were run. Table 15 shows the results of these analyses. There were no differences found using any of the scoring methods.

Table 15

Means, Standard Deviations, and t-values of Office Workers' and Office Supervisors' Office Decision-making Cases Scores Using Office Supervisor "Best" and "Weighted" and Office Worker "Best" and "Weighted" Solutions When Scoring

Variable	Workers		Supervisors		t-value
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	
Office Sup (Best)	4.68	1.38	4.74	1.47	-.16
Office Sup (Weighted)	21.66	3.51	22.63	3.17	-1.27
Office Worker (Best)	4.66	1.21	4.47	1.25	.65
Office Worker (Weighted)	23.08	3.09	23.03	2.47	.08

*p < .05.
**p < .01.

Office Work Perceptions

Question 6: Do students, after having completed a course in office procedures, model office, or cooperative office education, have perceptions of office work different from their perceptions prior to enrollment in the course?

The results of the t-test analyses comparing the pre- and posttest scores on the office work perceptions instrument are reported in Table 16, p. 34.

The analyses show that the posttest scores were significantly higher than the pretest scores in all three courses and for All Students on job knowledge, job qualifications, and total score. Personal qualifications posttest scores were significantly higher than pretest scores only for model office students and All Students. Although there was not a significant difference, the cooperative office education posttest mean

score on personal qualifications was slightly lower than the pretest mean score. There were no significant differences for any groups in pre- and posttest interpersonal relations scores.

Table 16

Means, Standard Deviations, and t-values of Office Procedures, Model Office, Cooperative Office Education, and All Students for the Office Work Perceptions Pre- and Posttest Scores

Variable	Pretest		Posttest		t-value
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	
Office Procedures					
Job Knowledge	10.89	1.18	11.06	.99	1.98*
Personal Qualifications	13.46	.90	13.57	.85	1.62
Interpersonal Relations	11.70	1.18	11.77	1.27	.71
Job Qualifications	14.76	1.28	15.09	1.29	3.41**
Total Score	50.86	3.34	51.50	3.18	2.95**
Model Office					
Job Knowledge	10.82	1.18	11.17	.90	4.59**
Personal Qualifications	13.60	.72	13.74	.55	2.91**
Interpersonal Relations	11.83	1.09	11.91	1.11	1.02
Job Qualifications	14.89	1.23	15.18	1.00	3.44**
Total Score	51.14	2.73	52.00	2.33	5.34**
Cooperative Office Education					
Job Knowledge	10.84	1.22	11.12	1.16	3.02**
Personal Qualifications	13.47	1.04	13.46	1.10	-.10
Interpersonal Relations	11.40	1.37	11.53	1.24	1.45
Job Qualifications	14.62	1.53	14.94	1.53	2.81**
Total Score	50.33	3.99	51.08	3.71	2.66**
All Students					
Job Knowledge	10.85	1.19	11.12	1.02	5.43**
Personal Qualifications	13.51	.90	13.59	.87	2.01*
Interpersonal Relations	11.64	1.23	11.74	1.22	1.83
Job Qualifications	14.75	1.36	15.07	1.29	5.47**
Total Score	50.77	3.41	51.52	3.14	5.75**

*$p < .05$.
**$p < .01$.

Question 7: Are the office work perceptions of students affected by the following factors?
a. Office education course completed
b. Socioeconomic status of the student
c. Interaction of office education course completed and socioeconomic status of the student

Univariate two-way analysis of covariance based on course and socioeconomic status was used to test the differences in the students' office work perception subtest adjusted posttest scores. By using a multivariate two-way analysis of covariance procedure, adjusted total test scores were compared. The results of these analyses are reported in Table 17.

Table 17

Univariate and Multivariate Analyses of Covariance for Office Work Perceptions Subtests and Total Test Using Pretest Scores as Covariates, by Course and Socioeconomic Status

Variable	MS	F
Course (Multivariate F-ratio is 1.83)		
Job Knowledge	.67	.72
Personal Qualifications	3.01	4.42*
Interpersonal Relations	3.58	2.87
Job Qualifications	1.27	.86
Socioeconomic Status (Multivariate F-ratio is .87)		
Job Knowledge	1.48	1.60
Personal Qualifications	.04	.06
Interpersonal Relations	1.56	1.25
Job Qualifications	.21	.14
Course and Socioeconomic Status (Multivariate F-ratio is .72)		
Job Knowledge	1.19	1.28
Personal Qualifications	.58	.85
Interpersonal Relations	.92	.74
Job Qualifications	.12	.08

*$p < .05$.
**$p < .01$.

The analysis revealed that the only significant difference was in the perception of personal qualifications among students who had completed the various courses. Adjusted mean scores for the three groups were: Model Office (13.70), Office Procedures (13.53), and Office Education (13.50). Student office work perceptions were not affected by socioeconomic status. Interaction between course and socioeconomic status was not a factor in the office work perceptions of students completing the three office education courses.

Unadjusted and adjusted posttest mean scores, along with standard deviations, can be found in Appendix D, Tables 26-28, pp. 65-66.

Business Fundamentals and General Information

Question 8: Do students, after having completed a course in office procedures, model office, or cooperative office education, score higher on the Business fundamentals and general information test than they did prior to enrollment in the course?

The t-test analyses comparing the pre- and posttest Business fundamentals and general information test scores are reported in Table 18, p. 37.

The analyses show that the office procedures posttest spelling, plurals, general information, arithmetic, memory, and total test scores were significantly higher than the pretest scores. There were no significant differences when the pre- and posttest grammar, expression, and judgment scores were compared.

Model office students' posttest spelling, plurals, expression, general information, memory and total test scores were significantly higher than were their pretest scores. On grammar, judgment, and arithmetic, no significant differences were found between pre- and posttest scores.

Cooperative office education posttest scores were significantly higher than pretest scores on only two of the subtest (grammar and expression) and total test scores. The cooperative office education posttest judgment score was the only score of all the t-test computations found to be significantly lower than pretest score. None of the other cooperative office education posttest scores (spelling, plurals, general information, arithmetic, and memory) were significantly different from the pretest scores.

When the posttest scores of All Students were compared with their pretest scores, significant differences were found on eight of the nine t-tests. In seven areas (spelling, plurals, expression, general information, arithmetic, memory and total test), this difference was significant at the .01 level. The posttest grammar score was significantly higher than the pretest score at the .05 level. Judgment was the only area where significant growth

Table 18

Means, Standard Deviations, and t-values of Office Procedures, Model Office, Cooperative Office Education, and All Students for the Business Fundamentals and General Information Pre- and Posttest Scores

Variable	Pretest		Posttest		t-value
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	
Office Procedures					
Spelling	11.11	2.32	11.66	2.13	4.08**
Plurals	7.49	1.53	7.91	1.37	4.76**
Grammar	10.18	2.39	10.34	2.64	.95
Expression	2.24	1.43	2.29	1.47	.48
General Information	10.83	2.99	11.62	3.02	4.40**
Judgment	3.34	.96	3.35	1.02	.11
Arithmetic	5.83	2.54	6.67	2.85	4.65**
Memory	6.74	2.55	7.42	2.27	3.66**
Total Score	57.76	9.45	60.91	10.27	6.23**
Model Office					
Spelling	11.29	2.32	11.69	2.25	2.92**
Plurals	7.13	1.67	7.51	1.67	3.49**
Grammar	10.39	2.55	10.47	2.48	.49
Expression	2.08	1.33	2.36	1.50	2.73**
General Information	10.37	2.91	10.83	3.13	3.14**
Judgment	3.41	.89	3.44	.87	.49
Arithmetic	7.09	2.72	7.24	2.88	.92
Memory	7.38	2.05	7.75	1.90	2.75**
Total Score	59.09	10.39	60.90	11.22	3.93**
Cooperative Office Education					
Spelling	11.42	2.45	11.61	2.62	1.26
Plurals	7.14	1.60	7.26	1.83	.94
Grammar	9.95	2.31	10.30	2.46	2.04*
Expression	2.19	1.45	2.43	1.40	2.40*
General Information	10.29	3.00	10.60	3.51	1.65
Judgment	3.41	.85	3.21	1.11	-2.57*
Arithmetic	5.85	2.59	6.14	2.97	1.43
Memory	6.84	2.54	6.98	2.63	.70
Total Score	57.00	9.41	58.40	11.86	2.26*
All Students					
Spelling	11.28	2.37	11.65	2.34	4.59**
Plurals	7.25	1.61	7.56	1.65	4.89**
Grammar	10.17	2.42	10.37	2.52	2.06*
Expression	2.17	1.40	2.36	1.45	3.21**
General Information	10.50	2.97	11.01	3.25	5.20**
Judgment	3.39	.90	3.33	1.01	-1.23
Arithmetic	6.25	2.68	6.68	2.93	4.02**
Memory	6.99	2.40	7.38	2.31	3.89**
Total Score	57.95	9.78	60.06	11.19	6.83**

*$p < .05$.
**$p < .01$.

for All Students was not found. Although not significant, the judgment posttest score was, in fact, lower than the pretest score.

Students who have completed office education courses have higher achievement on the Business fundamentals and general information test than before completing such courses. However, office procedures and model office students gain more, as measured by the Business fundamentals and general information test, than do cooperative office education students.

Question 9: Are students' scores on the Business fundamentals and general information test affected by the following factors?

a. Office education course completed
b. Socioeconomic status of the student
c. Interaction of office education course completed and socioeconomic status of the student

To test the differences in the Business fundamentals and general information subtest scores, univariate two-way analyses of covariance based on course and socioeconomic status and using pretest scores as the covariates were run. Multivariate two-way analysis of covariance based on course and socioeconomic status was used to test the difference in adjusted total test mean scores, using the pretest score as the covariate. Table 19, p. 39, shows the results of these analyses.

The analyses revealed significant differences on the following subtests among students completing the three office education courses: plurals (OP, $\bar{X}$ = 7.91; MO, $\bar{X}$ = 7.41: COE, $\bar{X}$ = 7.33)[1], general information (OP, $\bar{X}$ = 11.31; MO, $\bar{X}$ = 10.81; COE, $\bar{X}$ = 10.66), judgment (OP, $\bar{X}$ = 3.46; MO, $\bar{X}$ = 3.39; COE, $\bar{X}$ = 3.27), and memory (OP, $\bar{X}$ = 7.40; MO, $\bar{X}$ = 7.63; COE, $\bar{X}$ = 7.05). A significant difference was also found on the adjusted total test score among the various courses. The course completed does make a difference in student achievement on plurals, general information, judgment, and memory, as well as on the Business fundamentals and general information total test score.

Socioeconomic status significantly affected student performance on the general information (Low SES, $\bar{X}$ = 10.53; Middle SES, $\bar{X}$ = 10.81; High SES, $\bar{X}$ = 11.26) and judgment (Low SES, $\bar{X}$ = 3.53; Middle SES, $\bar{X}$ = 3.37; High SES, $\bar{X}$ = 3.23) subtests.

Interaction between courses and socioeconomic status was found on the grammar and judgment subtests. The combination of course and socioeconomic status does affect student achievement on grammar and judgment, but does not affect the other subtests or the total.

Pretest and adjusted posttest mean scores, along with standard deviations, can be found in Appendix D, Tables 29-31, pp. 67-68.

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[1]Adjusted means are shown.

Table 19

Univariate and Multivariate Analyses of Covariance for Business Fundamentals and General Information Subtests and Total Test Using Pretest Scores as Covariates, by Course and Socioeconomic Status

Variable	MS	F
Course (Multivariate F-ratio is 3.00**)		
Spelling	.85	.23
Plurals	16.55	8.69**
Grammar	.76	.16
Expression	2.49	1.45
General Information	26.52	4.67**
Judgment	3.17	3.41*
Arithmetic	17.66	2.95
Memory	22.80	5.36**
Socioeconomic Status (Multivariate F-ratio is 1.33)		
Spelling	.37	.10
Plurals	.34	.18
Grammar	.75	.16
Expression	.43	.25
General Information	25.92	4.56*
Judgment	3.32	3.56*
Arithmetic	.12	.02
Memory	.62	.15
Course and Socioeconomic Status (Multivariate F-ratio is 1.23)		
Spelling	3.92	1.08
Plurals	1.97	1.03
Grammar	12.05	2.58*
Expression	1.47	.86
General Information	4.98	.88
Judgment	3.29	3.53**
Arithmetic	1.19	.20
Memory	1.30	.31

*$p < .05$.
**$p < .01$.

Chapter 4

CONCLUSIONS AND RECOMMENDATIONS

This chapter includes the conclusions drawn by the investigators based on the findings of their research and recommendations for future study.

Conclusions

Based on the findings of this study, the following conclusions may be drawn:

1. Posttest office decision-making cases scores for model office students were significantly higher than pretest scores in three cases: when using the office supervisor "best" and office worker "best" and "weighted" solutions when scoring. It is concluded that students who complete a model office course do make office decisions different from those made prior to enrollment in the course.

2. It is doubtful whether completion of the office procedures course of study affects office decision-making abilities of students, since only when using the office worker "weighted" solutions in scoring were the posttest scores significantly higher than the pretest scores.

3. Since there were no significant differences between pre- and posttest office decision-making cases scores using any scoring method, it is concluded that completion of the cooperative office education course does not affect office decisions made by students.

4. After completing their study, office education students as a group do make office decisions different from those made prior to enrollment in office education courses. This difference, however, may be attributable to the difference found between pre- and posttest model office students' scores.

5. When posttest office decision-making cases scores were adjusted on the basis of pretest scores, analyses of covariance revealed no significant differences in office decision-making ability among the students who completed the various office education courses. It is concluded, therefore, that, when pretest scores are accounted for, the office education course of study completed does not affect office decision-making ability. It is also concluded that socioeconomic status does not affect office decision-making ability nor is there an interaction effect of course and socioeconomic status on office decision-making ability.

6. Regardless of office education course completed, students make office decisions similar to those made by office supervisors.

After completing their study in office education, students make office decisions similar to those made by office workers except for office procedures and cooperative office education students and All Students when using the office supervisor "weighted" solutions for scoring.

It is concluded that students basically make office decisions similar to those made by both office supervisors and office workers.

7. No significant differences were found in the office decisions made by office workers and office supervisors. The conclusion was drawn that office supervisors and office workers make essentially the same office decisions, as measured by the office decision-making cases.

8. Based on the findings of this study, it is concluded that completion of an office education course of study does change students' perceptions of job knowledge, job qualifications, and total office work perceptions. It is also concluded that students completing a model office course change their perceptions of personal qualifications required for office workers.

9. After posttest office work perceptions scores were adjusted on the basis of pretest scores, analyses of covariance revealed that there was a significant difference in personal qualifications office work perceptions among students who completed the various office education courses. It is concluded that office education course of study completed does affect a student's perception of personal qualifications required for office workers. Examination of the adjusted mean scores shows that model office students had an adjusted mean score higher than either the office procedures or cooperative office education students' mean scores. It is also concluded that neither socioeconomic status nor interaction of course and socioeconomic status affect student office work perceptions.

10. Based on the t-test analyses comparing pre- and posttest scores on the Business fundamentals and general information test subtests, the following conclusions are drawn:

    a. Completion of a course in office procedures improves student achievement in the following areas: spelling, plurals, general information, arithmetic, memory, and total score.

    b. Completion of a course in model office improves student achievement in the following areas: spelling, plurals, expression, general information, arithmetic, and total score.

c. Completion of a course in cooperative office education improves student achievement in the following areas: grammar, expression, and total score. Completion of a course in cooperative office education also negatively affects students' judgment score; that is, students who completed the cooperative office education course scored significantly lower on the posttest than they did on the pretest. No explanation is offered for this change.

d. Study in office education improves student achievement in the following areas: spelling, plurals, grammar, expression, general information, arithmetic, memory, and total score.

11. Based on univariate and multivariate analyses of covariance on Business fundamentals and general information posttest scores, using pretest scores as the covariates, it is concluded that office education course of study affects student achievement in plurals, general information, judgment, and memory subtests, as well as on the total test. The nighest adjusted means for each significantly different subtest were scored by office procedures students, with the exception of memory, for which model office students were highest.

It is also concluded that socioeconomic status has an effect on achievement in general information (High SES group had highest adjusted mean) and judgment (Low SES had highest adjusted mean). Interaction of course and socioeconomic status affects achievement in the areas of grammar and judgment (Low SES in OP had highest adjusted mean on both subtests).

Recommendations

As a result of the findings of this study, the following recommendations are made:

1. Since no studies were found which have compared the effectiveness of the three types of office education courses in developing the various office skills, such a study should be undertaken. Skills to be investigated should include typewriting, adding and calculating machines, machine transcription, and recordkeeping, among others.

2. In reviewing the literature for this study, no research was found which has compared the effectiveness of all office education courses in developing such business knowledges as records management, data processing, and office procedures. It is recommended that such a study be undertaken.

3. As an additional measure of course effectiveness, a one-year follow-up of the students who participated in this study should be undertaken. Factors to be considered should include percentage of placement in related occupations, types of jobs obtained, beginning salaries, promotions, job satisfaction, and job satisfactoriness. Such studies might also be profitably undertaken three years and five years after graduation.

4. The office work perception scales were originally validated on the basis of business manager responses. It is suggested that these scales be revalidated using office workers. The revalidated scales should then be used in a study similar to this one to determine if it is a more discriminating instrument.

5. The office decision-making instrument should be refined so that it is easier to score and analyze.

6. A study should be undertaken which provides validity and reliability data for the Business fundamentals and general information test.

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Appendices

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Appendix A

STUDENT INFORMATION SHEET

Student's Name _____
(Last Name) (First Name)

Teacher's Name _____

School _____

This Class: Office Procedures _____
Model Office _____
Office Coop _____

Your Grade in School: 11 _____ Your Sex: Male _____ Your Age: _____
12 _____ Female _____

Answer the following questions for both of your parents. If you are living with one parent, answer the questions for that parent only. If you are living with guardians, answer the questions that follow for your guardians.

What is the highest amount of education your father has had?

_____ 0-4 years
_____ 5-6 years
_____ 7-8 years
_____ some high school
_____ high school graduate
_____ some education after high school graduation
_____ graduate of 4-year college
_____ post-graduate or professional training

What is the highest amount of education your mother has had?

_____ 0-4 years
_____ 5-6 years
_____ 7-8 years
_____ some high school
_____ high school graduate
_____ some education after high school graduation
_____ graduate of 4-year college
_____ post-graduate or professional training

What is the occupation of your parents or what kind of work do they do? (If retired, write retired and the kind of work done before retirement. If unemployed, write unemployed and kind of work usually done. If mother is not customarily employed, write housewife. DO NOT TELL WHERE THEY WORK, only the kind of work they do.)

Father _____

Mother _____

Have you worked for pay in any job other than in a cooperative education position? _____ Yes
_____ No

If you have been employed in a job other than cooperative education, complete the following for all jobs you have held.

Company	Job Title	Average Hours Worked Per Week	Employed From	Employed To

Indicate the number of quarters of ALL business classes which you will have completed by the end of this year. Include junior high school classes. (One semester is the same as two quarters; one year is the same as four quarters.)

_____ Bookkeeping/Accounting

_____ Recordkeeping

_____ Shorthand

_____ Typewriting

_____ Business Law

_____ Consumer Economics

_____ Business English (or Communications)

_____ Filing and Records Management

_____ Office Cooperative Education

_____ Data Processing

_____ Occupational Relations

_____ Model Office

_____ Clerical Practice (or Procedures)

_____ Secretarial Practice (or Procedures)

_____ Office Practice (or Procedures)

_____ Business Machines

_____ General (or Basic) Business

List Others: _____

_____

_____

Appendix B

OFFICE WORK PERCEPTIONS

Directions

Each of the statements in this booklet tells you something about office workers or office work. For each item, indicate whether you agree or disagree by putting an X through A (if you agree) or D (if you disagree). DO NOT MAKE ANY MARKS ON THIS BOOKLET. Put all of your answers on the answer sheet provided.

When "minority group office workers" is used in a question, it refers to Mexican, Negro, Oriental, Indian, and Puerto Rican office workers.

Sample Statement

I look forward to a full-time office job after high school.

If you agree with that statement, then you should cross out the A; if you disagree, then you should cross out the D. Now proceed with the following statements, indicating your response on the answer sheet provided.

---

1. Dependability is an important quality of an office worker.
2. Religious beliefs are important in determining the kind of office in which a person would work.
3. In the cafeteria of a large company, minority group office workers often eat lunch with the white workers.
4. Continually arriving at work almost on time and getting jobs done only close to on time is an acceptable habit for an office worker.
5. How far one goes in office work and related jobs depends largely on ability and training.
6. A few office jobs require a knowledge of the postal system and mail services.
7. Office work means dealing with varied groups of people--fellow workers, supervisors, and the general public.
8. Employees of a small office must be prepared to handle a wide variety of duties.
9. More business information is learned in the classroom than on the job.
10. An office worker owes no loyalty to his employer or to the company.

11. Because office work is the same routine day after day, it is not necessary to be able to adjust quickly to changing situations.

12. Knowing how to operate such machines as adding machines, calculators, and duplicators will give an advantage when applying for an office position.

13. A future office worker needs to learn as much occupational information as he can while still in school so that he can set specific goals for himself and work toward those goals.

14. A clean, neat, and well-groomed appearance is not necessary for people in office work because they are usually seen only by other employees.

15. With training in office work a person could get a job either in an office or in an office service agency which provides clerical help for large offices when needed.

16. Office jobs are available only in large cities.

17. Sometimes other workers should be assisted on a rush job even if it is during lunch hour.

18. It would disturb you to have your office supervisor check your work closely.

19. Friendly relations with co-workers has nothing to do with efficiency in a business office.

20. The need for office workers is decreasing.

21. Since there are adding and calculating machines to do computations with numbers, it is not necessary for the office worker to be able to use arithmetic accurately.

22. It may be possible for a well-qualified person to lose his job because he cannot get along with fellow employees.

23. If a person's goal for promotion is to be respected, he must accept that others have the same goal.

24. Going to a night school or training center to improve work skills would make little impression on an employer.

25. Superiors at work are usually addressed by their title--Mr., Miss, or Mrs.--and the last name.

26. An office worker has the responsibility of keeping his own work area looking neat and orderly.

27. Jobs with data processing machines will probably require additional training after high school--either on-the-job or at a training center.

28. Promotions and salary increases are based on efficiency, production, dependability, and appearance.

29. Even though the beginning work does not require a knowledge of bookkeeping principles, in some cases having this knowledge may help later as the employee advances to more important positions in the company.

30. Personal appearance is one qualification for getting a job, holding a job, and advancing in a job.

31. Having a shorthand skill will increase the job opportunities available.

32. Most stenographer and secretarial positions which call for shorthand skill require a minimum shorthand speed of 80 words per minute.

33. Sometimes it is necessary for office personnel to work under pressure.

34. A high school diploma is usually required for most office jobs.

35. A job which involves answering the phone or greeting customers requires a good speaking voice.

36. Members of some minority groups cannot get a job in an office.

37. It is appropriate for girls to wear a lot of makeup to work in an office.

38. Office workers often have an interview and are given employment tests before they are hired.

39. It is helpful to office workers to have a good memory for names and faces.

40. If a personal problem exists that might affect a person's work, it would be proper to talk it over with the office supervisor.

41. The office is responsible for keeping routine operations of a company running smoothly.

42. Good manners are necessary for effective human relations.

43. Willingness to do the maximum and readiness to assume new responsibilities are important traits for the employee who expects to "go places."

44. Confidential information learned during working hours should not be repeated to other people.

45. An office worker's understanding of the organization of the company for which he works has little if anything to do with his efficiency on the job.

46. Office work usually means steady employment.

47. Communication is a basic skill necessary for almost all office jobs.

48. If asked to make a decision at work, an office worker needs to consider what will be best for the firm.

49. Good penmanship is not important in office work because others do not need to be able to read your writing.

50. To get along with people usually involves respecting the ideas of others, even if one does not agree with them.

51. A high school diploma is usually preferred for all office jobs.

52. In a large office, file clerks are the only workers who need to have had training in filing systems.

53. An office employee is a member of a team and he should work with that team by doing his full share of work.

54. Clothes need not be fancy or expensive, but they should always be clean and pressed to start the day.

55. A person should bathe daily and use a reliable deodorant as part of a good grooming program.

Appendix C

DECISION-MAKING CASES

Instructions

On the following pages are a number of situations or cases in which a problem exists. After each case, four possible courses of action are suggested.

For each case, you are to indicate your preferences for the four possible courses of action given. There are no correct or incorrect actions.

In the blanks provided ON THE ANSWER SHEET, put a "1" in the blank beside the choice that you feel is the most appropriate action to be taken. Place a "2" after the next best course of action, and so on, placing a "4" beside the least desirable course of action.

DO NOT LEAVE ANY BLANKS WITHOUT A NUMBER IN THEM.

Sample Case

Judy had been the private secretary to Mr. Smith for over a year. Mr. Smith was a department head in a large regional office of a national manufacturing firm. She enjoyed working for him very much and she was enjoying the wide range of activities of her position. She not only was happy with her department assignment, but she also found many advantages in her association with the company. Fringe benefits were many, the location of the job was excellent, and there was good chance for advancement.

Judy discovered one day that she had unwittingly been a party to a fraud. Through a carefully designed scheme, Mr. Smith was stealing considerable sums of money from the company.

What should Judy do?

4 a. Remain loyal to her supervisor and say nothing.

1 b. Show her loyalty to the company and explain the situation to Mr. Smith's superior.

3 c. Ask for a reassignment to another office in the company without explaining why.

2 d. Leave the company completely.

REMEMBER: There are no right or wrong answers. The numbers you place in the blanks simply reflect your preferences. DO NOT WRITE ON THIS BOOKLET. Put all answers on the answer sheet.

Case 1

Mr. Bennett had left specific instructions with his receptionist, Miss Jackson, that under no circumstances was he to be interrupted by either visitors or telephone calls, as he had work that had to be completed by the following morning.

Mr. Jones called later that morning from the accounting department to inquire about an item on one of Mr. Bennett's expense sheets. Miss Jackson told Mr. Jones that Mr. Bennett was not in but would return his call as soon as he returned. Just as she finished saying this, Mr. Bennett picked up the telephone and gave Mr. Jones the information he needed.

What should Miss Jackson do next?

a. No further action is required on her part as she was merely following her employer's directions.

b. Call Mr. Jones and apologize to him, telling him that she was merely following Mr. Bennett's direction.

c. Call Mr. Jones and inform him that instead of making up an excuse that was not true, she should have stated that Mr. Bennett had requested that he not be disturbed. In the future, she will do this.

d. Tell Mr. Bennett that if he wants her to give excuses for him in the future that he must help out by not giving himself away by answering the phone.

Case 2

Jack had been working in the accounts receivable department of a large company for one week. During the lunch hour, when Jack was the only employee left in the office, the phone rang and Jack answered it. The caller, without identifying himself or asking to whom he was speaking, proceeded to yell about a mistake that had been made on an invoice sent to him. He swore a great deal and did not give Jack an opportunity to explain that his supervisor was out of the office at the moment. Finally, after trying unsuccessfully to interrupt, Jack became very angry.

What should Jack do?

a. Hang up the phone on the caller.

b. Wait until the caller cools down, and then try to get the necessary details from him.

c. Continue to try to interrupt so that he can explain the situation to the caller.

d. Transfer the call to his supervisor who is in the lunch room.

Sue's typing teacher had taught her that she should be an efficient and accurate worker in the office. They had studied several letter styles in class, including the Simplified and Modern letter styles, both of which can be typed very quickly. Her teacher had also stated that a secretary should check with her employer before changing the letter style commonly used in the office.

On her first day on the job, Sue's boss dictated a letter to be sent to the company president. After her boss had finished dictating, Sue asked him if it would be acceptable with him if she used the Simplified format, showing him a sample of the letter. He approved of its appearance and the ease of typing and encouraged her to use the new letter style.

A few days later, her letter was returned through intercompany mail covered with arrows and comments in red, showing her how the letter should have been typed in the traditional format used by the secretary previously in her position. In addition there was a comment made by the president's secretary: "How dare you send a letter looking like this to the president! I have not shown him this letter and will not until it is typed correctly."

What should Sue do now?

a. Call the president's secretary and explain that her boss had given his approval to use the Simplified form.

b. Ignore the president's secretary and continue to use the Simplified form.

c. Return to the use of the traditional format for typing letters.

d. Continue to use the Simplified form, but type all letters to the company president in the traditional format.

Case 4

At 4:30 in the afternoon, with only one-half hour left before quitting time, Marge's employer gave her three letters to be typed before she could leave. The letters were important ones, going to the presidents of the company's three major accounts. Marge was concerned about working overtime because she had a 5:15 dental appointment for which she had waited one month.

In the last paragraph of the first letter, Marge put her hands on the wrong keys and didn't realize her mistake until she had typed an entire line. The letterhead on which she was typing was a high-quality white bond paper.

What should Marge do?

a. Retype the letter and plan to work overtime, cancelling her dental appointment.

b. Erase the incorrect line with a typewriting eraser and retype the line correctly.

c. Use correction tape (when struck with a typewriter key, the chalk on the back is transferred to the paper covering up the incorrect key) and retype correctly.

d. Use liquid eraser (a white liquid) to cover up the incorrect line and retype the line correctly.

Case 5

Janet was a secretary in a small company, and her job responsibilities included keeping the inventory on supplies and ordering supplies when the inventory was low. At one point, Janet noticed that the pencil and pen supply, as well as the supply of a few other small items like paper pads, erasers, glue, tape, etc., were disappearing at an abnormally fast rate.

Later that day, Janet noticed one of the secretaries getting a shorthand pad for the third time in three days, as well as taking two new pens out of a box for the fourth time in three days. Janet knew that the other secretary was widowed and had a family of six school-aged children at home.

What should Janet do?

a. Send out a general notice to all employees regarding the problem of theft of supplies.

b. Set up a checkout system for all supplies.

c. Report the other secretary to her boss and let him handle it.

d. Tell the other secretary that she knows that she is taking more supplies than are necessary for her job and give her an opportunity to return the extra supplies that she has taken.

Case 6

Jane graduated from high school in June and accepted a secretarial position with a small manufacturing company. Her boss wore a business suit and most of the clients who visited the office were dressed in a similar manner. There were three other women office employees, all of whom were older than Jane, and had been with the company for several years. Their dress was very informal, including, at times, slacks, shorts, sandals, etc.

Jane had been taught in her business classes that this was not appropriate dress for the office, and she felt that she should dress as she had been taught. If she did not conform to the dress of the other employees, however, her appearance would stand in marked contrast to theirs.

What should Jane do?

a. Wear nicer, dressier clothing, taking a chance that this will not create resentment from the other workers.

b. Consult with her boss about how he would like to have her dress.

c. Dress in the same manner as the other women office employees, thus lowering her own standards of dress.

d. Select an in-between style of dress that would be less formal than she wishes, but still more formal than the other women's attire.

Case 7

Melissa had worked for the Jones Company for about one month. She was an outstanding business education student in high school and had always strived for perfection in her work in the new position. To date, no serious problems had occurred on her job.

Then one day an important client visited the office and asked why he had not yet received certain important material. Melissa's boss, knowing that the material was on his desk waiting for his signature, turned to her and said, "Didn't you send out that material?" Melissa also knew that the material had been sitting there for a week.

What should Melissa do?

a. Say nothing and just continue her work.

b. Tell her boss that it is still sitting on his desk waiting for his signature, and offer to get it for the client.

c. Tell the client that it must have been lost in the mail, but that she will make a photocopy of the carbon copy right away and give it to him.

d. Take the blame herself, and claim that she just didn't get it mailed yet.

Case 8

A credit bureau provides credit information to retail firms on prospective purchasers. When a customer wishes to make a credit purchase, the store phones the bureau. The files are then personally checked for the information necessary to make the decision as to whether the credit sale should be made.

On Sundays, a reduced work staff of only two employees is used. Steve had just been employed by the bureau for one week when he was asked to work on Sunday. Mary, a long-term employee, was assigned to work on the same day. The phones were very busy that day, and frequently three telephone calls came in at the same time. Steve soon found that he was being required to handle two phone calls at once while Mary continued to handle just one. This happened several times throughout the day, and Steve became quite annoyed with Mary for not sharing the workload. Steve hesitated to say something to Mary because he was a new employee.

What should Steve have done in this situation?

a. Say nothing and continue to handle two phone calls for each call that Mary handles.

b. Explain the situation to his supervisor and let him take care of it.

c. Talk with Mary, suggesting that he handle half of the telephone calls and that Mary handle the other calls.

d. Let the second phone continue to ring, hoping that Mary will catch the hint and answer the second phone herself.

Case 9

Alice went to work in a small sales office upon her graduation from high school. She was an eager, hardworking secretary and pitched right in. She found, however, that the boss was out of the office frequently, sometimes for days at a time. When he was away from the office, the other employees often stopped work for a game of cards or just visiting.

The other three women employees invited Alice to join them in a game of cards one day. Alice refused as she wanted to get her work done. She completed her work and pitched in on the work of the others to insure that all of the office work was completed. She felt sure that the boss wasn't aware of this wasted time, as each day all of the work was done. Alice felt, however, that if each worker put in a full-day's work they might be able to get along with one less office employee. She felt strongly that an office worker should put in "a day's work for a day's pay."

What should Alice do?

a. Continue to work hard and ignore the time wasted by all the other office employees.

b. Join the others in the leisurely activities, and let the boss find out that the work isn't getting done.

c. Discuss the situation with the boss. The result may be the elimination of one of the office positions.

d. Quit her job and get another position.

Case 10

Nancy worked in a one-girl office. Her employer owned the business. The boss's wife made it a common practice to have Nancy type for her Country Club activities. Nancy consented to do this as it didn't take more than a half hour a day, and she always had at least that much spare time in which to complete the work.

One day, however, Nancy had some letters to be typed before the mail was picked up when the boss's wife came in with another job to be typed for a Country Club meeting that evening. If Nancy were to do the typing, she would not have time to complete the typing of her business letters for that day's mail. If she didn't do the job, on the other hand, she knew that the boss's wife would be very upset.

What should Nancy do?

a. Present the problem to her boss and let him make the decision.

b. Tell the boss's wife that she simply cannot do the typing for her and hope that she won't get too angry with her.

c. Do the typing for the boss's wife and then work overtime to finish the letters, mailing them herself on the way home from work.

d. Tell the boss's wife that that's not her responsibility, and that in the future she should make arrangements to have someone else do the typing for her.

59-60- Appendix D Supplementary Tables, 20-31

Table 20

Means, Standard Deviations, and t-values of Office Procedures Stays and Drops for Student Characteristics, Office Work Perceptions, Business Fundamentals and General Information Test, and Office Decision-making Cases Scores

Variable	Stays (N = 236)		Drops (N = 75)		t-value
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	
Sex	1.97	.16	1.96	.20	.61
Age	17.06	.40	16.94	.38	2.12*
Socioeconomic Status	2.39	.69	2.30	.67	.99
Pay	1.26	.44	1.27	.45	-.13
Related Work Experience	72.50	273.45	92.67	307.59	-.51
Unrelated Work Experience	495.41	626.02	463.79	572.67	.37
Vocabulary	10.33	2.27	9.83	2.27	1.62
Courses	15.13	5.32	14.30	5.78	1.10
Office Work Perceptions					
Job Knowledge	10.89	1.18	10.78	1.42	.57
Personal Qualifications	13.47	.90	13.26	1.46	1.07
Interpersonal Relations	11.70	1.17	11.54	1.30	.98
Job Qualifications	14.76	1.28	14.46	1.86	1.23
Total Score	50.86	3.34	50.05	4.79	1.29
Business Fundamentals and General Information					
Spelling	11.12	2.31	10.82	2.38	.89
Plurals	7.49	1.53	7.42	1.39	.34
Grammar	10.20	2.41	9.84	2.10	1.09
Expression	2.24	1.43	1.94	1.24	1.54
General Information	10.85	2.99	10.27	3.60	1.29
Judgment	3.34	.96	3.24	1.14	.71
Arithmetic	5.82	2.54	5.95	2.56	-.36
Memory	6.73	2.55	6.63	2.30	.28
Total Score	57.79	9.44	56.10	10.44	1.23
Office Decision-making					
Office Supervisor (Best)	4.60	1.47	4.00	1.52	2.65**
Office Supervisor (Weighted)	22.36	3.04	21.52	3.13	1.80
Office Worker (Best)	4.05	1.33	3.44	1.43	2.94**
Office Worker (Weighted)	21.40	3.07	20.48	3.41	1.90

*$p < .05$.
**$p < .01$.

Table 21

Means, Standard Deviations, and t-values of Model Office Stays and Drops for Student Characteristics, Office Work Perceptions, Business Fundamentals and General Information Test, and Office Decision-making Cases Scores

Variable	Stays (N = 236)		Drops (N = 47)		t-value
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	
Sex	1.97	.17	1.96	.20	.46
Age	17.07	.94	17.40	3.47	-.64
Socioeconomic Status	2.14	.79	1.98	.93	1.23
Pay	1.25	.45	1.26	.44	-.21
Related Work Experience	67.24	303.62	55.65	195.54	.33
Unrelated Work Experience	724.68	1159.64	649.13	1332.54	.39
Vocabulary	10.24	2.88	10.48	5.31	-.30
Courses	21.34	5.26	20.94	6.79	.39
Office Work Perceptions					
Job Knowledge	10.83	1.20	11.76	2.98	-1.41
Personal Qualifications	13.64	.94	14.62	4.03	-1.11
Interpersonal Relations	11.85	1.09	11.90	1.14	-.23
Job Qualifications	14.93	1.33	15.90	4.13	-1.08
Total Score	51.04	3.34	49.86	9.03	.60
Business Fundamentals and General Information					
Spelling	11.35	2.40	10.94	2.53	1.06
Plurals	7.29	2.92	8.21	5.26	-1.16
Grammar	10.41	2.56	11.00	4.14	-.95
Expression	2.08	1.33	2.26	1.44	-.81
General Information	10.42	2.89	9.64	2.75	1.70
Judgment	3.40	.90	3.49	.86	-.64
Arithmetic	7.18	3.12	6.38	3.52	1.56
Memory	7.56	3.01	7.57	2.25	-.05
Total Score	59.03	10.51	56.68	9.83	1.42
Office Decision-making					
Office Supervisor (Best)	4.47	1.52	4.63	1.36	-.60
Office Supervisor (Weighted)	22.47	2.53	22.18	2.62	.63
Office Worker (Best)	3.98	1.49	4.29	1.21	-1.21
Office Worker (Weighted)	21.42	2.69	21.58	2.60	-.35

*$p < .05$.
**$p < .01$.

Table 22

Means, Standard Deviations, and t-values of Cooperative Office Education Stays and Drops for Student Characteristics, Office Work Perceptions, Business Fundamentals and General Information Test, and Office Decision-making Cases Scores

Variable	Stays (N = 241)		Drops (N = 42)		t-value
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	
Sex	1.95	.22	1.90	.30	.95
Age	16.98	.39	17.11	.32	-1.96
Socioeconomic Status	2.18	.73	2.00	.86	1.30
Pay	1.32	.47	1.14	.35	2.77**
Related Work Experience	69.76	327.11	146.56	368.45	-1.29
Unrelated Work Experience	697.52	1007.71	552.56	743.37	1.04
Vocabulary	10.16	2.50	9.86	2.65	.66
Courses	20.75	6.69	18.42	6.14	1.97*
Office Work Perceptions					
Job Knowledge	10.84	1.22	10.47	1.41	1.69
Personal Qualifications	13.47	1.03	13.32	1.09	.87
Interpersonal Relations	11.41	1.37	11.55	1.25	-.62
Job Qualifications	14.62	1.53	14.08	2.02	1.59
Total Score	50.34	3.99	49.42	4.25	1.31
Business Fundamentals and General Information					
Spelling	11.42	2.45	11.03	2.74	.89
Plurals	7.14	1.59	7.38	1.46	-.85
Grammar	9.94	2.31	10.49	2.18	-1.36
Expression	2.18	1.45	1.86	1.60	1.22
General Information	10.29	3.00	10.54	3.36	-.46
Judgment	3.41	.85	3.14	1.11	1.47
Arithmetic	5.84	2.59	5.49	3.19	.74
Memory	6.84	2.53	6.16	2.83	1.49
Total Score	56.98	9.40	56.24	10.77	.43
Office Decision-making					
Office Supervisor (Best)	4.69	1.48	4.37	1.33	1.15
Office Supervisor (Weighted)	22.81	2.76	21.87	2.98	1.74
Office Worker (Best)	4.18	1.40	3.63	1.25	2.07*
Office Worker (Weighted)	22.00	2.87	20.97	3.07	1.84

*$p < .05$.
**$p < .01$.

Table 23

Unadjusted and Adjusted Office Decision-making Cases Posttest Mean Scores and Standard Deviations, by Course

Variable	OP			MD			CDE		
	Unadj		Adj	Unadj		Adj	Unadj		Adj
	$\bar{X}$	S.D.	$\bar{X}$	$\bar{X}$	S.D.	$\bar{X}$	$\bar{X}$	S.D.	$\bar{X}$
Office Supervisor "Best"	4.80	1.56	4.91	4.84	1.46	4.82	4.83	1.39	4.76
Office Supervisor "Weighted"	22.74	3.10	23.07	22.62	2.94	22.50	22.77	2.96	22.69
Office Worker "Best"	4.20	1.45	4.36	4.34	1.37	4.32	4.28	1.30	4.25
Office Worker "Weighted"	22.08	3.03	22.37	22.19	3.03	22.05	22.33	2.84	22.23

Table 24

Unadjusted and Adjusted Office Decision-making Cases Posttest Mean Scores, by Socioeconomic Status

Variable	SES - Low		SES - Middle		SES - Upper	
	Unadj $\bar{X}$	Adj $\bar{X}$	Unadj $\bar{X}$	Adj $\bar{X}$	Unadj $\bar{X}$	Adj $\bar{X}$
Office Supervisor "Best"	4.77	4.85	4.84	4.88	4.83	4.75
Office Supervisor "Weighted"	22.77	22.94	22.76	22.81	22.64	22.51
Office Worker "Best"	4.35	4.41	4.25	4.29	4.27	4.24
Office Worker "Weighted"	22.19	22.34	22.23	22.30	22.17	22.01

Table 25

Adjusted Office Decision-making Cases Posttest Mean Scores, by Course and Socioeconomic Status

Socioeconomic Status	Office Supervisor "Best"	Office Supervisor "Weighted"	Office Worker "Best"	Office Worker "Weighted"
OP: Low Socio-economic Status	5.16	23.93	4.72	23.07
OP: Middle Socio-economic Status	4.87	22.63	4.28	22.00
OP: High Socio-economic Status	4.68	22.65	4.08	22.04
MO: Low Socio-economic Status	4.76	22.01	4.28	21.54
MO: Middle Socio-economic Status	4.99	23.03	4.44	22.66
MO: High Socio-economic Status	4.71	22.46	4.25	21.95
COE: Low Socio-economic Status	4.62	22.89	4.22	22.42
COE: Middle Socio-economic Status	4.79	22.78	4.14	22.24
COE: High Socio-economic Status	4.87	22.40	4.38	22.04

Table 26

Unadjusted and Adjusted Office Work Perception Posttest Mean Scores and Standard Deviations, by Course

Variable	OP			MO			COE		
	Unadj		Adj	Unadj		Adj	Unadj		Adj
	$\bar{X}$	S.D.	$\bar{X}$	$\bar{X}$	S.D.	$\bar{X}$	$\bar{X}$	S.D.	$\bar{X}$
Job Knowledge	11.06	.99	11.03	11.17	.90	11.15	11.12	1.16	11.18
Personal Qualifications	13.57	.85	13.53	13.74	.55	13.70	13.46	1.10	13.50
Interpersonal Relations	11.77	1.27	11.74	11.91	1.11	11.84	11.53	1.24	11.60
Job Qualifications	15.09	1.29	15.08	15.18	1.00	15.13	14.94	1.53	15.00
Total	51.50	3.18		52.00	2.33		51.08	3.71	

Table 27

Unadjusted and Adjusted Office Work Perception Posttest Mean Scores, by Socioeconomic Status

Variable	SES - Low		SES - Middle		SES - Upper	
	Unadj $\bar{X}$	Adj $\bar{X}$	Unadj $\bar{X}$	Adj $\bar{X}$	Unadj $\bar{X}$	Adj $\bar{X}$
Job Knowledge	11.17	11.16	11.16	11.16	11.06	11.04
Personal Qualifications	13.59	13.57	13.58	13.57	13.60	13.59
Interpersonal Relations	11.74	11.74	11.78	11.80	11.69	11.64
Job Qualifications	15.09	15.10	15.06	15.06	15.06	15.04

Table 28

Adjusted Office Work Perception Posttest Mean Scores, by Course and Socioeconomic Status

Socioeconomic Status	Job Knowledge	Personal Qualifications	Interpersonal Relations	Job Qualifications
OP: Low Socio-economic Status	10.93	13.42	11.73	15.06
OP: Middle Socio-economic Status	11.14	13.55	11.72	15.11
OP: High Socio-economic Status	11.01	13.63	11.78	15.08
MO: Low Socio-economic Status	11.15	13.70	11.88	15.16
MO: Middle Socio-economic Status	11.15	13.75	11.97	15.11
MO: High Socio-economic Status	11.14	13.66	11.67	15.12
COE: Low Socio-economic Status	11.40	13.60	11.63	15.09
COE: Middle Socio-economic Status	11.18	13.42	11.70	14.97
COE: High Socio-economic Status	10.95	13.49	11.48	14.94

Table 29

Unadjusted and Adjusted Business Fundamentals and General Information Posttest Mean Scores and Standard Deviations, by Course

Variable	OP			MO			COE		
	Unadj		Adj	Unadj		Adj	Unadj		Adj
	$\bar{X}$	S.D.	$\bar{X}$	$\bar{X}$	S.D.	$\bar{X}$	$\bar{X}$	S.D.	$\bar{X}$
Spelling	11.66	2.13	11.78	11.69	2.25	11.65	11.61	2.62	11.54
Plurals	7.91	1.37	7.91	7.51	1.67	7.41	7.26	1.83	7.33
Grammar	10.34	2.64	10.55	10.47	2.48	10.31	10.30	2.46	10.35
Expression	2.29	1.47	2.25	2.36	1.50	2.31	2.43	1.40	2.45
General Information	11.62	3.02	11.13	10.83	3.13	10.81	10.60	3.51	10.66
Judgment	3.35	1.02	3.46	3.44	.87	3.39	3.21	1.11	3.27
Arithmetic	6.67	2.85	6.68	7.24	2.88	6.84	6.14	2.97	6.36
Memory	7.42	2.27	7.40	7.75	1.90	7.63	6.98	2.63	7.05
Total	60.91	10.27		60.90	11.22		58.40	11.86	

Table 30

Unadjusted and Adjusted Business Fundamentals and General Information Posttest Mean Scores, by Socioeconomic Status

Variable	SES - Low		SES - Middle		SES - Upper	
	Unadj $\bar{X}$	Adj $\bar{X}$	Unadj $\bar{X}$	Adj $\bar{X}$	Unadj $\bar{X}$	Adj $\bar{X}$
Spelling	11.61	11.72	11.67	11.59	11.66	11.66
Plurals	7.37	7.55	7.59	7.57	7.60	7.52
Grammar	10.29	10.58	10.40	10.33	10.38	10.30
Expression	2.29	2.36	2.41	2.37	2.34	2.28
General Information	10.20	10.53	10.82	10.81	11.57	11.26
Judgment	3.50	3.53	3.37	3.37	3.22	3.23
Arithmetic	6.42	6.62	6.67	6.62	6.80	6.65
Memory	7.19	7.32	7.39	7.35	7.45	7.41

Table 31

Adjusted Business Fundamentals and General Information Posttest Mean Scores, by Course and Socioeconomic Status

Socioeconomic Status	Spelling	Plurals	Grammar	Expression	General Information	Judgment	Arithmetic	Memory
OP: Low Socio-economic Status	12.09	8.07	11.40	2.30	10.54	3.75	6.52	7.46
OP: Middle Socio-economic Status	11.68	7.87	10.06	2.15	11.13	3.33	6.75	7.31
OP: High Socio-economic Status	11.56	7.77	10.17	2.28	11.70	3.29	6.77	7.42
MO: Low Socio-economic Status	11.68	7.25	10.16	2.26	10.77	3.24	6.82	7.42
MO: Middle Socio-economic Status	11.68	7.61	10.55	2.50	10.80	3.60	6.89	7.78
MO: High Socio-economic Status	11.59	7.38	10.22	2.17	10.87	3.35	6.82	7.69
COE: Low Socio-economic Status	11.38	7.32	10.18	2.52	10.27	3.60	6.51	7.07
COE: Middle Socio-economic Status	11.41	7.24	10.37	2.44	10.50	3.18	6.20	6.96
COE: High Socio-economic Status	11.82	7.42	10.50	2.40	11.21	3.04	6.36	7.12